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THOMAS G. NEWMAN, Editor.

EDITORIAL

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While it has seemed impossible to have our European visitors so time their travels as to be here at the time of the Convention in the United States, we are pleased to learn that our Canadian friends have improved the opportunity presented at the Toronto Exhibition, to show their appreciation and good will. Bee-keepers of the United States only lack the opportunity to do the same.

A Larger Crop of Apples, it is said, will be grown if a colony of bees is placed in the orchard. The pollen is rubbed from their bodies against the pistils of thousands of flowers, which thus become fertilized. Many of the strange freaks of hybridizing varieties, are due to the agency of bees.

To Make Labels Adhere to Tin, an exchange says: "Take of flour 6 ounces, of molasses ½ a pint, and of water 1½ pints, and boil as usual for flour paste. Or, dissolve 2 ounces of resin in 1 pint of alcohol. After the tin has been coated with the solution, allow nearly all the alcohol to evaporate before applying the label."

What a Woman can Do!—The following is from the Nebraska *State Journal*, concerning the display of honey, etc., in the Horticultural Hall at the State Fair:

This exhibit by Mrs. J. N. Heater, of Columbus, Nebr., consists of comb and extracted honey, wax, and apiarian supplies. It is tastefully arranged, striking in appearance, and is admitted by all judges to be the best exhibit ever made in the State. Various articles of the display were awarded first premium, and the general verdict of all is that as a bee-keeper Mrs. Heater has no equal in Nebraska. She has studied the science for years, and has embarked in the enterprise in a purely business manner. Such an exhibit as this is the best means of getting before the people the fact that for bee-keeping the natural resources of Nebraska are among the foremost States of the Union. This fact has been recognized, but nevertheless there is a wide field for labor in this direction, and the sooner it is utilized the better.

Nebraska is an excellent honey-producing State, and we are pleased to note the above item, but do not insert it to disparage any other apiarist of that enterprising State. Still it shows what a woman can do.]

Our European Visitors.—During the Exhibition at Toronto, Ont., we are pleased to note that the Toronto Bee-Keepers' Association held a special meeting on Sept. 15, 1887, to welcome Mr. T. W. Cowan, chairman of the British Bee-Keepers' Association, and Mr. Ivar S. Young, editor of the Norwegian bee-periodical. Our readers are well aware that these gentlemen are on a tour of inspection among the bee-keepers of America.

Among those present were, Rev. W. F. Clarke, R. McKnight, D. A. Jones, A. Pringle, S. Cornell, R. F. Holtermann, M. Emigh, and Vice-President J. B. Hall. The latter called the meeting to order, and requested Mr. R. McKnight to read the following address:

To Thomas William Cowan, Esq.:

DEAR SIR.—On behalf of the bee-keepers of Ontario we bid you and Mrs. Cowan welcome to Canada. As chairman of the British Bee-Keepers' Association, we recognize in you the representative of a body of philanthropic gentlemen who devote much of their time to the promotion of apicultural knowledge among the artisan and laboring classes of your own country.

We are not ignorant of the good work you have accomplished. We know you have been instrumental in inducing thousands of your countrymen to embark in the fascinating work of bee-keeping, and thus spend their leisure hours in healthful, profitable employment. The fact that the Association of which you are the chairman (with its affiliated branches) numbers some ten thousand members, attests the success of your labors. We sincerely hope that you and your associates may be long spared to prosecute the good work so well organized, and so skillfully conducted.

As proprietor and editor-in-chief of the *British Bee Journal* you are better known to the apicultural world than most of your countrymen. Your published works on scientific and practical bee keeping have won for you a name and a fame far beyond your own sea girt home. We rejoice in the opportunity this visit affords us of making a closer and more personal acquaintance with you.

We indulge the hope that your present visit to the United States and Canada, and your personal intercourse with the leading bee keepers of both countries, will increase your zeal in the good work of teaching men the means and methods whereby the earth may be made to yield its increase of delicious and healthful nectar, which abounds in the flora in the fields, and in the forests of most countries. The extent to which the honey industry may be developed is as yet but little understood, and he who labors to make it better known is certainly doing as much for mankind as he who makes two blades of grass grow where but one flourished before.

We are especially pleased that you so timed your visit to Toronto as to be able to witness the display of Canada's industrial products now on exhibition here. A careful examination of these will help you to form a just estimate of what the people of this young country have accomplished within the present generation, and give you an idea of the resources of the Dominion. It will serve to prove to you that Canadians are not drones in this hive of British colonists, and may help inspire you with the common faith of our countrymen that,

"If our past has records few
In battle song or glory,
Our future rises fair to view,
Gleaming with morning's youthful dew,
And bright with coming glory."

Accept this trifle as a slight but tangible expression of respect and esteem for you, as a man and a brother bee keeper. We wish you and Mrs. Cowan a pleasant time while you remain on this side of the Atlantic, and a safe return to your home and family beyond the seas.

Mr. McKnight also made an address of welcome to Mr. Young, and expressed the pleasure of the Association upon having two such distinguished visitors. Then Mr. Cowan was presented with a handsome gold headed walking stick, and Mr. Young with a beautiful meerschaum pipe and case.

Mr. Cowan replied at length, detailing the work of the British Bee Keepers' Association, and paying a compliment to the delegates who were present at the Colonial Exhibition in charge of the Ontario honey exhibit.

Mr. Young also expressed his thanks for the hearty reception he had received from the bee-keepers in Canada.

As Mr. Cowan had his large microscope with him, those present were afforded the pleasure of examining through it many things of interest to them. A very pleasant evening was spent, and one that will be long remembered by those who were present.

Honey Sugar.—In a German periodical named the *Hannverishes Magazin*, it is stated the Jews in Moldavia have a method of making honey into a hard white sugar, which is employed by the distillers of Dantzic to make their liquors. The process consists in exposing the honey to the frost during three weeks, sheltered from the sun and the snow, in a vase of some material, which is a bad conductor of heat. The honey does not freeze, but becomes hard as sugar, transparent and white.

We have a small can of sugar made from honey, in our Museum. It was placed there some ten years ago by Mr. T. S. Bull, who made it. It is good brown sugar, but its cost is too much to be profitable.

Fall Flowers will help to fill up the hives with honey for winter stores. Mrs. L. Harrison, in the *Prairie Farmer*, remarks as follows about it:

There is plenty of time yet for bees to lay up stores for winter. During the summer of 1885 there was but little honey after the middle of June, and I thought I would have to feed many colonies, and prepared to do it. Grasshoppers were responsible in a great measure for the loss of the crop that season, as bees are very sensitive to smell, and would not work on flowers where the hoppers had been. When I went to feed the first colony, the hive did not stand to suit me, and I took hold of it to lift it, when I found it was too much for my strength. On investigating, I found every hive full of rich, thick golden honey, which had been gathered, as it were, during the last days of grace just before frost. It was all gathered during a week or ten days.

A Chapter from our pamphlet, "Honey as Food and Medicine," may be found in the "Bee-Keepers' Magazine" for September (page 275), credited to the "Farmer and Dairyman," and signed "Thomas Brasel, Portland, March, 1887." There are twenty places in the United States called Portland, but the State is omitted, of course, to cover up the theft. We have seen it in the "Bee-Keepers' Advance" and other papers. We have no objection to such being copied, but we do not like to see it credited erroneously.

The October Number of *Frank Leslie's Sunday Magazine* offers much to the reader, and of so varied a character that every class is sure to be pleased. Serial and short stories, poems, essays, art and science make up a very attractive table of contents.

QUERIES

With Replies thereto.

[It is quite useless to ask for answers to Queries in this Department in less time than one month. They have to wait their turn, be put in type, and sent in about a dozen at a time to each of those who answer them; get them returned, and then find space for them in the JOURNAL. If you are in a "hurry" for replies, do not ask for them to be inserted here.—ED.]

Removing Pollen from Combs.

Query 474.—How can I remove old pollen from brood-combs?—G. T.

Melt the combs.—DADANT & SON.

Soak the combs in water until the pollen can be thrown out in the extractor.—G. L. TINKER.

Give it to the bees in the spring. We never have too much pollen.—A. J. COOK.

Put in the hive in early spring, and unless spoiled, the bees will use up the pollen, converting it into brood.—G. M. DOOLITTLE.

You cannot do it, but you can let the bees do it if you will insert the combs in the hive in the spring.—J. P. H. BROWN.

Practically this is impossible. The only way is to give them to the bees in the spring, when they will take care of the bee-bread.—W. Z. HUTCHINSON.

Put them in the brood-nest in the spring of the year; that is, exchange them for combs in the brood-nest that have no pollen in them.—G. W. DEMAREE.

I do not know the best way for *you* to remove the pollen or bee-bread. I believe it best to let the bees do it, which I always do.—JAMES HEDDON.

If you have more than the bees can use to advantage, melt them up. You can dip it in water, and the pollen will ferment and loosen in the cells, when you can jar a large part of the pollen out.—H. D. CUTTING.

If not spoiled, let the bees use it. If spoiled, it can be soaked up thoroughly and thrown out with the extractor. If there is only a little of it, the bees will clean it up.—C. C. MILLER.

Keep it until spring, and then allow the bees to use it in rearing brood. I do not think it can be profitably removed in any other way. Soaking it out with warm water has been advised but I have never found it to work satisfactorily.—J. E. POND.

Exchange them for combs in the brood-nest having no pollen in the spring. Such brood-combs of pollen will be very acceptable to the bees then, and *they* will take care of them much more easily than you can, and without expense or labor on your part.—THE EDITOR.

Number of Brood-Combs for Winter.

Query 475.—In order to winter bees safely, how many combs are necessary?—Ont.

From 3 to 8, according to the size of the colony.—G. M. DOOLITTLE.

Just what they can cover, provided they contain the requisite amount of stores.—J. P. H. BROWN.

Only enough to hold the bees and abundant stores. I consider unoccupied combs in the winter a damage.—C. C. MILLER.

As many as are necessary to give 25 pounds of honey to the bees, and room for the cluster.—DADANT & SON.

I have wintered a colony well on the summer stand on two Langstroth frames. I prefer from four to six Langstroth frames well covered with bees at the commencement of cold weather.—J. E. POND.

Perhaps not any are absolutely "necessary." I consider from 5 to 8 of ordinary size the best number.—JAMES HEDDON.

This depends upon the size of the colony. I have repeatedly wintered nuclei on 3 Gallup frames.—A. J. COOK.

It will depend upon the size of the colony; from 2 to 10 frames. A small colony will winter on three combs in good condition, if well taken care of.—H. D. CUTTING.

That depends upon the size of the colony. I winter all good colonies on a full set of combs. I am not an advocate of "crowding bees" in their winter quarters.—G. W. DEMAREE.

I prefer 5, and not more than 6 Langstroth frames, or an equivalent space. But in a very large, well-packed chaff-hive, bees will winter very well on full sets of combs, if the stores are not too much scattered through the combs.—G. L. TINKER.

It depends upon the size of the colony, and where the bees are wintered. Out-of-doors I would not try to winter a colony upon less than 5 combs; in a warm cellar as small a number as 2 or 3 may be used, if the colony is proportionally small.—W. Z. HUTCHINSON.

Even nuclei can be wintered in a good cellar; but out-of-doors, the colony should have sufficient winter stores, and from 5 to 8 frames.—THE EDITOR.

Is Phenol Injurious to Bees?

Query 476.—Is phenol injurious to bees when used in moderate quantities?—New York.

I have had no experience with it.—G. M. DOOLITTLE.

I do not know.—W. Z. HUTCHINSON.

I do not think it is, but I have had no experience in its use for bees.—G. L. TINKER.

Mr. Thos. W. Cowan, in his *Bee-Keepers' Guide*, gives the following safe recipe, as indicated by Mr. Cheshire: 1. Pure phenol in crystal, 12 ounces; water, 3 ounces. Shake until dissolved. 2. Solution No. 1, one ounce; water, 1 pint. 3. Solution No. 2, one ounce; sugar syrup, 1 pint.—DADANT & SON.

From what I have read of its use on bees, I think it is safe if used in moderate quantities.—H. D. CUTTING.

From what I have read, I should judge not, but I have never tried it.—C. C. MILLER.

I do not think so. If it were I think we should have learned the fact from those who have used it.—A. J. COOK.

I have had no experience with phenol, and have but little faith in its usefulness in the apiary.—G. W. DEMAREE.

If used to eradicate disease it is not injurious; but if applied to bees in a normal condition, I should say it was.—J. P. H. BROWN.

I have never used it, but I do not see why it should be more injurious than smoke. Unless used in quantity sufficient to kill at once, I cannot think that any harm will follow from its use.—J. E. POND.

I do not know. I have never used any, never had any occasion for its use, and hope I never will have. I think there is no necessity for this spreading of foul brood, which is now so rife in our country.—JAS. HEDDON.

No. Mr. Cheshire, who had to destroy many colonies of bees in experimenting "in order to find the curative dose," says: "The vapor of phenol (the phenol being poured on blotting paper), on two occasions, killed all the brood." He then adds: "I found that 1-200 (that is one part of pure phenol to 200 parts of syrup) was refused by the bees altogether; that 1-400 might be given constantly to a sound colony without appearing to limit the queen in breeding, *or touch her health*; that 1-500 dispatched foul brood quickly, even while honey was coming in; and that 1-750 appeared enough when it was not. I have established these quantities as the correct ones." Moderate quantities are, therefore, not injurious.—THE EDITOR.

Convention Notices.

☞ The Eastern Indiana Bee-Keepers' Association will meet at Richmond, Ind., on Oct. 5, 1887.
M. G. REYNOLDS, *Sec.*

☞ The Pan-Handle Bee-Keepers' Association will hold its next meeting in the K. of P. Hall, No. 1138 Main St., Wheeling, W. Va., on Oct. 26 and 27, 1887. All bee-keepers are cordially invited.
W. L. KINSEY, *Sec.*

☞ The Kentucky State Bee-Keepers' Society meets in Falmouth, Pendleton Co., Ky., on Oct. 18, 1887. This is expected to be a very interesting meeting, and a large attendance is expected.
J. T. CONNLEY, *Sec.*

Union Convention at Chicago.—The North American Bee-Keepers' Society and the Northwestern Bee-Keepers' Society will meet in joint convention at the Commercial Hotel, cor. Lake and Dearborn Streets, in Chicago, Ills., on Wednesday, Thursday and Friday, Nov. 16, 17 and 18, 1887. Arrangements have been made with the Hotel, for back room, one bed, two persons, $1.75 per day, each; front room, $2.00 per day each person. This date occurs during the *second week* of the Fat Stock Show, when excursion rates will be very low.
W. Z. HUTCHINSON, *Sec.*

Correspondence.

This mark ⊙ indicates that the apiarist is located near the center of the State named; ♂ north of the center; ♀ south; ♌ east; ♎ west; and this ♂ northeast: ♉ northwest: ♏ southeast; and ♀ southwest of the center of the State mentioned.

For the American Bee Journal

Causes of Drouth—Plausible, if correct.

W. J. CULLINAN.

On page 582, Mr. J. M. Hambaugh undertakes to give the causes of drouth and methods of securing rainfall. Now, while I do not pretend to be meteorologist enough to fully explain the causes of the present severe drouth which has prevailed almost all over the whole country, I will give my views, like Mr. H., for what they are worth.

He says he believes "that when we remove the natural cause of rainfall by drainage and tileage, we may reasonably expect a reverse of the natural laws in the shape of drouths." This, while it may seem plausible to some, is to me very imcomplete; for had we to depend upon local evaporation from the very small portion of land drained by tile (which will probably not average one acre in one hundred), drouths would indeed be frequent. When we take into consideration the fact that three-fourths of the earth's surface is covered with water, while the remaining one-fourth is largely intersected by rivers, creeks and branches, and thickly dotted throughout its length and breadth with lakes and ponds, both natural and artificial, and containing millions of acres of *un*drained land, "drainage and tileage" as a cause of drouth falls into such utter insignificance as to be hardly perceptible.

And further, if local evaporation were sufficient to produce rain, one would think that Mr. Hambaugh, whose farm lies adjacent to the Illinois river, that has rolled by it for ages, and never yet showed the bottom of its channel to the sun, and in the midst of thousands of acres of *un*drained and *un*tiled swamp lands, would have been blessed with sufficient rainfall to answer all ordinary purposes. But, alas! it was as dry on Mr. H's farm as it was on farms twenty miles distant from any river, lake or pond (if such a farm can be found); thus showing conclusively that local evaporation has very little to do with it.

I do not know what may have been the peculiar position of the planets which are said to affect the weather, but I firmly believe that the absence of high winds, and almost entire immunity from storms of various kinds has been chief among the causes of the present generally severe and protracted drouth.

Again, Mr. H. says that "by a plentiful rainfall we may avert, to some extent, the ravages of the cyclone." Perhaps the atmosphere never was freer from moisture than it was the past summer, yet how many cyclones did we have? How does the cyclone record compare with three years ago when we had a plentiful rainfall? This is ample proof that dryness of the atmosphere is not conducive to cyclones as much as dampness, if affected by either.

The drouth—here, at least—has not been nearly so disastrous as Mr. H. would make it appear, where he says that had we gotton rain, "in the place of barren or burnt up fields, we would have them heavily laden with the products of the soil. In the place of empty hives, we would have them filled with honey, etc." "Instead of barren and burnt up fields" we have had this year, without any exception, the largest wheat and oat crop that was ever known in this section of the country; and I see the same recorded for Missouri and other States. We had a fair crop of hay, and will have more corn than we had last year. We have also double the yield of clover seed that ever was known before. It is true the honey crop has been a partial failure.

In places, I admit, the drouth has been disastrous, but this seems to be nature's method of resting the Earth, and allowing her to recruit her waning powers. There are men who would "ride a free horse to death," and there are also those who would tax the face of Mother Earth until they had wrested the last atom of fertility from her bosom, if nature did not come to the rescue, and by withholding the necessary rain, give her the rest she so much needs. True it is, that "The ways of the Lord are past finding out;" and just as true is the fact that what we consider disastrous to our interests is often a blessing in disguise. Such I consider the failure of the honey crop to bee-men-proper, weeding out, as it will, many of the side-issue individuals, cleansing the world's markets of surplus honey, creating a better demand, and giving better prices another year.

Here I rest, and leave this matter of rainfall and the causes of drouth to wiser heads and abler hands to fathom if they can, and give us the correct solution.

Mt. Sterling, ♎ Ills.

Indiana Farmer.

The Drouth, Shade for Hives, etc.

G. W. DEMAREE.

I keep an apiary of from 50 to 120 colonies of bees, and am deeply interested in the new and thriving industry of honey producing. Bee-culture is affected by drouth perhaps more than any other rural pursuit. The drouth has been more general the present season than in any season since the decade of drouth-years set in, and there is a wider-spread complaint of short honey-yield than at any time heretofore. How long this state of things will last is a discouraging problem. For one I do not partake of the dark forbodings of a majority of writers on this subject. I have lived long enough to know that there have been decades of dry years, and decades of seasonable years heretofore, and I believe that we may reasonably expect the same state of things in the future.

Although the honey-yield in this part of Kentucky was lighter than at any time heretofore, our bees are in better condition now than they were last season at this time. Notwithstanding the drouth, my bees have gathered a little nectar in the mornings, and the queens have continued to keep the hives well stocked with brood. It has been a rare case in the past to see so much brood at the first of September as is to be seen in my hives now. I may have to feed some for winter stores, but my bees will go into winter quarters well stocked with vigorous young bees.

It has been frequently asked if it will do to locate an apiary where there are no shade-trees to shade the hives in the heat of the day. My experience the past heated spell has satisfied me on this subject. There are no trees near enough by to cast a shade over any of my hives. My hives are about 4 inches from the ground, on a smooth blue-grass plat of ground which is protected by a plank and wire fence. The grass is kept closely mowed so as not to interfere with the flight of the loaded bees. Each hive has a shade-board over the hive-cover. This is all the shade the hives had during the late heated term, and not a single comb in my large apiary melted down. The "shade-board" over the cover of the hives, so as to have an air-space between the cover of the hive and the shade-board, is ample protection to my hives, and gives me a clean, smooth apiary yard, free from trees or other obstructions to operate in.

Christiansburg, ♂ Ky.

For the American Bee Journal.

Large Honey-Yield from Basswood.

M. A. GILL.

The season in southwestern Wisconsin has been a very peculiar one. Bees came out of the cellar in good condition; the season opened unusually favorable, and all went well until clover bloomed, when the relentless drouth kept us from getting any honey from that source. I did not even see one cell full of clover honey.

Raspberry and sumac were equal to the demand for brood-rearing, so that by the middle of June the bees were booming with everything but honey. When basswood bloomed (two weeks earlier than is usual) I think that two persons with a good appetite and a few warm biscuits could have eaten all the surplus honey from 88 colonies.

When basswood first bloomed the bees were too young to be ready for it. I doubled my colonies down to 80, and took the queens away. They had

been previously equalized until they all came up to the swarming point at once. They were in two yards, 46 and 34 colonies respectively; 33 of the 34 would have had sealed cells within 36 hours from the time the first cell was sealed.

I divided them long enough before basswood so they would have no brood to feed, and so the young queens would commence laying before the close of the yield. Of course the *modus operadi* is patent to every one, so I will only give the result: Basswood lasted 22 days. The colony on scales stored 208 pounds; one other colony got 74 pounds in three days, and the 80 colonies got 10,000 pounds, an average of 125 pounds.

Bees in this locality got from nothing to 70 pounds per colony. One peculiarity this season, the older the bloom got the better it yielded. The atmosphere reached that peculiar electric condition just at the last. Since basswood bloom the bees have just made a living, but are getting a little surplus to-day from asters.

Star, Wis., Sept. 14, 1887.

New England Farmer.

A New Economy—Bee-Keeping.

W. S. BLAISDELL.

Not a few of the appliances which abound in modern times are those which are designed to save the wastes. To-day we cannot afford to lose. In the times of our fathers, such was the prolific condition of a virgin soil, that they thought but little of taxing it to the remotest without any adequate return of manures as an exchange for the yearly products. Barns were built with scarcely a thought of what might be saved. No regard was had for the compost heap. It was not dreamed of even, or if mentioned at all, it was only to stir ridicule for notions of fancy farming—the kind done with "gloves and patent leathers," the very extreme of rustic sarcasm. But this is all changed. A man now gets rich by saving what the fathers let run to waste.

The barns are built for saving, and the older ones are being remodeled for the same purpose. The compost heaps are places of peculiar interest. They are the mint which turns the ore of everything apparently worthless into the gold of profitable fertilizers. The fields are being redeemed. The farms are growing in productiveness, which is better than to grow in size. And all but the New England pastures—for we must make an exception here, and we do it too as a witness to an improvidence yet to be rectified—are beginning to blossom as the rose. New England has had to mix brains with her farming work; and it must be admitted that brains are beginning to win.

There is, however, another step above this, and it may be there are many of them; but one is prominent, so much so that it is attracting some attention and a little discussion. During the blossoming season of the year, there is a large excess of sweetness deposited within the calyx of the flower, more than what the ripening of the germ requires. It is left to the rains to be dissolved and carried away. Millions of pounds of the choicest nectar that nature affords are wholly lost, and there is nothing returned as an excuse for the waste. With any adequate means for saving and preservation, there is enough of this necessary element of human subsistence washed down the stems and and stalks of our flowering plants, to furnish this great need in the provisioning of man.

But man on his part, as if unwilling, to appropriate in this particular at least, what has been provided freely in nature, has been most indefatigable in seeking his supplies by the most difficult and costly methods. He has tapped the maple, but the tree gives up its life reluctantly and makes him pay for the deed. He has planted in his best soil the sorghum and the sugar canes, but what with the labor of cultivation, the exhaustion of his lands, and an expensive apparatus, the moral of his methods is taught in the smallness of his profits. The result has been, and still is, that the prices of sugars have always ruled high, and must be so as long as man forces himself away from a natural product. He can have his notions even when they are wrong, and he can blindly follow them; but then—he must pay the price.

It is fairly probable that we should not know of this vast waste, with all our research, with all our science, had it not been revealed to man through the instinct of an insect. The honey-bee has literally "made known what has been hid from the foundation of the world." There seems to be a very intimate relation between this insect and the human race, so much so, that if we will accept it, there appears therein a manifest design. The bee is not independent of man, while in some respects it rises far out of the possibilities of his reach or thought. It has no reason, not a glimmer of it. Myriads of them will slaughter themselves trying to follow a ray of light through glass, while they cannot find the way out of an enclosure, if it be in the rear and darkened. They do, however, put the skill and cunning of man to shame in a thousand ways. They are the most docile, unwearied, uncomplaining, and successful servants that man can have.

The colony is a model of a workshop. Two men working together, even if they be brothers, have more friction than 50,000 bees, all desperate workers for the common weal as they are, and silent sufferers as well. With man, temperament goes a good ways. When he is peaceable, people look the third time to see if he is not lazy; and where he is quarrelsome, they throw the cloak of charity over the fault in the apologetic remark that he is *smart*. The honey-bee is both peaceable and smart. The temper of the bee, the power to force its sting, is only its defensive armor. Its attack is a sacrifice of self for the protection of the colony—what some of us may do, so very reluctantly, for *our* country in her hour of peril.

The honey-bee then, and the secretions of the flowers which can be gathered by the bee, are very substantial gifts, providing for man, as is possible, about one-third of his subsistence. By no means has it yet been done, and herein may be perceived the vast waste of these years. It is urged very decidedly to any advocacy of the bee-keeping interests, that there are many who have tried it with but indifferent success or a total loss. That it is not so in all cases is proved by the great successes which have been achieved.

But why is it so even in an exceptional case? A very little observation enables one to see the reason. All the care goes to the cows, the hogs, and the geese, and there is no time left to be devoted to an insect whose delicate organization requires a hundred fold more skill from the man than what the coarser fibred animal does. The honey-bee responds quickly to a little skillful care. It needs only little, but that little both as to time and amount is vital to its prosperity, if not to its very life.

The condition of all success is the mixing of brains with one's work, and this is what the bee-keeper must emphatically observe. He must study the nature of the bee and its needs, so as to understand them. It cannot be wholly learned from books; careful, continued and discriminating observation is the only reliable means. And until the man can neglect everything else, if that be required, and attend to this bees, he will never do well in this choice line of production.

The honored Langstroth mixed a little brains with his work, and he did it at that juncture of time and development of this industry, that he was led to construct the movable-comb hive. This event marked a great advance in the art, and has made an illimitable industry possible. In doing this he did a deal of thinking for the farmer, clergyman as he was, and down to the latest time he has made us all the better off. But though more than a quarter of a century has gone, his genius is scarcely yet appreciated, nor has his invention wholly succeeded in driving out the old-formed hive, in using which our fathers were excusable, for they knew no better, but its continued use is a sarcasm on us.

It is not a question of entering into an experiment where new industries are to be tested. The matter is wholly a saving of wastes from an industry tested and proved, but whose wonderful possibilities are only now beginning to be appreciated. From this one source alone, careful judges have estimated that from $100 to $200 yearly can be added to the net profits of every farm in New England. We do not think the estimate high. There are some localities where the abounding raspberry, the white clover and the basswood are so plentiful that larger estimates would not be exaggerations. The forests, now only profitable to the woodman and lumberman, would give up a large yield

of nectar. The back places and corners, inaccessible to cultivation, but where the raspberry clings, may be the most productive plots. The hedges and stony places where only the goldenrod can thrive and bloom, may be fruitful of golden gains. The white clover fields and the buckwheat may be useful for other purposes than what the scythe and sickle contemplate.

Nor should we fail to notice the fact that all this is absolute saving. There is no pay-back to any phase of the industry. In producing honey, you do it to the prejudice of nothing. The lands are not the worse off for the profitable yield. You do not, in a cargo of it, ship also the heart of the hills and the valleys. That remains with us, and is growing larger the while. The soil is kept at home. The pastures—the poor, denuded pastures—come to be fruitful again, for the full hand gives back a moiety of the gains to enrich the desolate places. The bees fertilize the flowers and make all things more productive. Everything indeed smiles the more joyfully because of their coming and their going, and truly, it must be said of them, as one writer has felicitously bestowed the telling epithet, that they are the *blessed bees*.

Randolph, Vt.

For the American Bee Journal.

An Inexpensive Bee-Feeder.

E. S. EDEN.

As this is the month for feeding bees, I will give a description of my feeder, and plan of placing it on the hive. I make it as follows:

Take a strip of tin 4 inches wide and 12 to 16 inches long, according to the desired size of the feeder; make a rim by fastening the ends together with a lap joint. Then take another piece of tin 3½ inches wide, and a little shorter than the other, make another rim, and place a piece of cotton over this last or smaller rim; then shove it down into the larger one, and the feeder is finished.

In shoving the smaller rim with the cotton over the end into the larger one, the cotton is drawn very tight, like a drumhead, and it just goes down to within ⅛-inch of the lower edge of the larger rim, allowing sufficient bee-space between the cotton bottom of the feeder and the frames when it is placed on the hive.

In placing it on the hive, I turn back the quilt the width of the feeder, then cut a hole in a piece of paper a little smaller than the feeder; place this paper on the exposed frames, put the feeder over the hole in the paper, fill it with feed, put the cap on the hive, and the job is finished.

You will observe that the bees will enter the feeder through the hole in the paper, and suck the food down through the cotton bottom. It is not necessary to use heavy cotton, as it will not leak the food through it unless it is very thin. The object of the paper being placed on the frames, is to keep in the heat and save cutting a hole through the quilt. This feeder works grandly. It cannot daub the bees; can be cleaned very easily by replacing the cotton; and, above all, it is cheap and easily made, costing only 5 cents.

Eastwood, Ont.

Western Stock Journal.

A Plea for Extracted Honey.

REV. O. CLUTE.

The honey extractor is simply a can containing a revolving frame. Into this revolving frame the frames of honey are placed and rapidly revolved, or whirled around, by turning a crank. The centrifugal force throws the honey from the cells without breaking or in any way injuring the combs. The combs can then be returned to the hive to be again filled with honey.

In producing and using extracted honey, there are several important advantages, viz:

1. A large yield of honey. It is estimated by the most competent bee-keepers that it takes from 15 to 25 pounds of honey to make one pound of wax. When comb honey is produced this comb is used only once—it is sold with the honey and consumed. But in producing extracted honey, the comb is not consumed. The same comb may be filled and extracted several times in the course of a season, and then stored away for use another season. Thus the honey and time that would be used by the bees in comb-making can be devoted to gathering honey. With good management at least twice as much extracted honey as comb honey can be produced.

2. The good quality of the honey. Pure honey, as stored by bees, is one of the most beautiful and delicious articles of diet. Beeswax, or comb, is indigestible, and of no value as an article of food. Extracted honey is entirely free from wax or comb. But when comb honey is used, the indigestible comb must either be swallowed or removed from the mouth after swallowing the honey.

3. It is more easily handled. Comb honey is very easily injured. A slight bruise will set the honey to running, and soon the combs are damaged, and the sticky honey is leaking over everything. A very large part of the comb honey reaches market in an unsightly condition. But extracted honey is thrown from the combs, drawn from the extractor into kegs or barrels, and then taken to market in tin pails holding from one to ten pounds. The pails make neat, serviceable packages, that do not leak, are handled with care, and, when the honey is used, are valuable for use in the household. Extracted honey can be taken in barrels and kegs to any part of the world, and is becoming an important article of export.

4. It is more convenient to use. Honey is largely eaten with hot-cakes and hot biscuits. For these, extracted honey is just the thing. The crystal syrup-cup is full of the beautiful, clear, amber honey. It can be poured upon the buttered cakes until they swim in luscious sweetness. It can be poured into the pure, white china sauce-plates to be put with a teaspoon on the biscuits. Then if farmers, and everybody, would produce honey in abundance, it could be used for cakes, puddings, jellies, preserves, and temperance drinks, and for all these purposes the extracted honey is superior to any other.

5. Extracted honey is not *strained* honey. This distinction must be carefully made. Strained honey is often a very inferior article. Old black combs, filled with rank bee-bread, or with the larvæ of young bees, is broken up, and the honey, mixed with the juice of young bees and with bee-bread, is strained out. It is not wonderful that it is dark and muddy in color, and rank in flavor. But "extracted honey" is the pure article, thrown from the combs by centrifugal force, without admixture of young bees or bee-bread. It is honey in its purest and most serviceable shape.

6. It is cheaper than comb honey. As the bee-keeper can produce more extracted honey than he can of comb honey, with the same amount of bees and labor, he can afford to sell it for less. Hence it can be used by many who could not afford to buy comb honey. There is no doubt that comb honey has intrinsic excellences, which will always command for it a good market. But it is equally certain that extracted honey has merits which will rapidly bring it forward. We hope the day is not far distant when every family in the country and in the villages will keep bees to supply the family table with this delicious and healthful sweet.

Iowa City, Iowa.

For the American Bee Journal.

The Causes of Drouth Unknown.

EUGENE SECOR.

I wish to express my approval of the article on page 553, by J. C. Armstrong, on tile-draining as relates to drouth. It is the best that I have seen on the subject.

Only a day or two ago I was talking with a man who came to Iowa in 1854. He said they experienced a drouth about that time of such severity that in going by wagon from Muscatine to Fort Dodge—*in April*—there was not moisture enough to wet the wagon tires except when they forded rivers. Of course there was not a mile of railroad, nor a rod of tiling in Iowa. Immediately following this period was a wet one, when steamers ran on many of our inland rivers. And on page 563, we are informed that England is at present suffering from drouth, nearly as great as our own.

All this goes to prove that drouths and floods always have existed, and, I believe, always will; that they are independent of local bodies of water;

that tile-draining has nothing to do with it.

I have many times this summer talked with a certain theorist on this subject, who believed that tile-draining is a cause of drouth. I said to him, "Your argument must be based upon the theory that local rainfall depends upon local evaporation." "Yes." "Then will you please, at your leisure, tell me how many gallons of water it will require to cover Iowa one inch deep? And since we get an average rainfall of about 35 inches annually, where does the water come from, as there is not water enough in all our rivers, lakes, creeks and sloughs to cover the State *one* inch deep?" He has not yet answered that question. If that theory were correct, then Minnesota with her thousands of lakes, the British Isles surrounded by water, and various other localities that might be named, ought never to want for rain.

Another peculiar feature of this dry summer has been the precipitation of moisture west of what is considered the rain-belt. Parts of Dakota that usually get a much less rainfall than Iowa, have this year been blessed with enough for crops—and that, too, where the country is so dry as never to need draining.

So I infer that the great "cycle of the years" will again swing round, and we shall again have all the rain we need—if not more—notwithstanding the fact that a few farmers are trying to drain the malaria-breeding districts in which they are compelled to live. Let us possess our souls in patience. Drain your farms if they are wet in ordinary years. We shall again have the "early and latter" rains. Indeed, while I am writing, the "windows of heaven" are open, and we shall have several inches of rainfall at this one down-pour.

Forest City, Iowa.

Farmers' Advocate.

Honey—Marketing and Winter Care.

A. B. STINGER.

The same general rules which guide us in marketing extracted honey are applicable in the case of comb honey. It should be made attractive to the eye, and satisfying to the taste; and should bear the name of the producer upon each package of this kind, however small.

The greatest care should be taken to prevent the surface of the comb being soiled or broken. If so disfigured it should not be put upon the market unless it can be sold without the producer's name. The sections themselves should be scraped and sandpapered till they shine, and the crates should be either white and clean, or nicely stained or painted. Each package should "set off" its contents.

Honey should not be sent to market in the half stories or cases of the hives, but in nice white crates made for the purpose, with glass at one side, at least. There is a great deal in a show of honey, and so the more of these crates piled up in a window the better, because the honey is made more attractive, and also more conspicuous.

The winter care of honey is important. Extracted honey, if not kept in a constantly warm place, will granulate, that is, will become hard and white, and appear much like lard. Many people think this change in honey a sure sign of adulteration, and begin to talk of sugar. (Such poor creatures do really deserve our pity; but we must overcome a just contempt on our part before we can bestow such a sympathy.) The granulation of honey is the best test of its purity; if adulterated with glucose, honey will not become solid; or if with granulated sugar, it will become caky, and have crystals through it, and likely a hard crust on top.

To re-liquify honey, it is only necessary to warm it slowly and thoroughly. Proceed as follows:

Take a tin or iron vessel of sufficient size and place inside of it a wooden block or light iron-grating of some kind about half an inch high, and large enough to support the vessel containing the honey. Place this latter vessel upon its support, and fill the outer one with lukewarm water as high as possible without covering the honey. Remove the lid from the honey and place the whole affair over a slow fire; keep the water just under the boiling-point till the honey is all melted. Seal it up again while warm.

Honey (in the comb) should be kept where it is dark, dry and warm. The light will spoil the color of the capping; dampness will burst the cells and sour the honey; and cold will granulate it.

For the American Bee Journal.

The Season—An Old-Fogy Bee-Keeper.

E. W. WALES.

I began the season of 1887 with 27 colonies of bees in an average condition, and obtained 175 pounds of comb honey, and 75 pounds of extracted, in all 250 pounds. I increased my apiary to 58 colonies. The combs of one colony melted down in August, and one was robbed, leaving me 56 colonies for winter. Taking the season through, I must say that it is the poorest I have known in the 15 years of my bee-keeping.

I had a conversation with Mr. R. O. Lintz, of this place, who is a very intelligent and successful bee-keeper. He said that the present season was the poorest he has ever known, and if the outlook for next season was not good, for good prices for honey, he would feel almost discouraged. His advice is to stick to it, hoping that we may be blessed in the future. Like mine, his crop was not one-fourth of what it ought to be. We have had an almost unparalleled drouth.

I recently talked with an old-fogy bee-keeper living several miles from me. The first question he asked me was, "Have you any bees on hand?" I informed him that I had 56 colonies. I then asked him the same question, and his answer was "No."

Seven years ago last January I visited his apiary; it consisted of 44 colonies of bees. There the hives stood, some looking like the famous "leaning towers," and others nearly perpendicular; but all were the picture of squalid poverty and woe. The sun had just arisen, and was casting its light over the snow-manteled hills and valleys. I took a survey of the surroundings, and it was easy to see the key to the position. The hills and cliffs were covered with basswood (linden trees), while willow and soft maple were everywhere to be seen. The fields furnished white clover, and the river bottoms gave a perpetual bloom. All this was what supported these bees, in spite of utter dilapidation.

While I stood there, my friend noticed that I was interested in an old, old sycamore-log "gum" about 3 feet high, which was split open on both sides, from top to bottom, and bound together with an old rusty chain. Coming to where I was, he said: "That 'gum' of bees is 30 years old." I attempted to explain by saying, "You mean that you have had bees in that log for that length of time." He replied, "I say that them bees are 30 years old." I gave it up; he ought to know.

Some of his "gums" had glass through which you could see the bees at work. While others had great, clumsy drawers, holding from 4 to 6 quarts. He said that there was a good "king" in that gum, for he had always worked well for him. Just think of a "king honey-bee" reigning 30 years over subjects 30 years old, all the while in that old split log!

I made a bargain with him for 6 season; I to furnish the hives, and he to hive the first 6 swarms that issued the following summer. As the time nearly arrived, according to agreement, I appeared with the hives (the Simplicity pattern), and it was laughable to see him examine them—some of the frames were filled with foundation, while others had merely starters. He asked questions by the hour, and declared that the bees would eat out and drag from the hive such stuff as that foundation was!

Now as to the results: He had only one swarm issue, which he put into one of my hives. The rest of his bees laid out for weeks at a time, and there were no more swarms that season, and only 150 pounds of honey from 44 colonies. He said that the bees would die in such a "Yankee trap of a concern" as the Simplicity hive was.

I left my swarm with him, as the weather was extremely hot, and in due time put on 40 one-pound sections. In the fall I went after it. I took the sections off, all nicely filled with basswood honey. I explained to him what he might have done with his bees in proper hives; at which he called me a "yearling," and looked upon me with pity and commiseration. He said that I was going contrary to "natur," and had turned

"Young America." The hard winter of 1883-84 killed all of his bees, and he informed me that he should not commence again, as the Yankees were making comb honey by machinery, and a bee had no chance! As in days of old, such is the ignorance of a certain portion of mankind.

Disco, Mich., Sept. 20, 1887.

Prairie Farmer.

Provide Pasturage for the Bees.

MRS. L. HARRISON.

No farmer or stock-raiser would think of keeping sheep, cattle, or horses without a pasture or range for stock; if some apology for a farmer should try to do so, he would be accounted a fool, or a trifling, shiftless fellow. It is equally unwise to build up a large apiary without providing pasture or forage for bees. It is true that if your neighbor has good pasture for them, your winged stock can enjoy it without being impounded, nor will you run the risk of being sued for trespass; but if there is no good bee-pasture within a reasonable distance of your apiary (1½ or 2 miles) you must provide the same, if you hope to ever receive any shekels from the production of honey; and this is the way to provide it:

If you have land, plant of raspberries from ⅛ to ¼ of an acre. There are many good varieties, perhaps none better than the "Queen of the Market." The fruit for family use will pay you for the trouble, and the honey that your bees will gather will repay you. Sow upon any good, dry pasture land, white or Dutch clover with blue grass or red top; this makes a quality of feed relished by stock, and of unsurpassed excellence, and your bees will gather from the clover blossoms a nectar "fit for the gods."

If you have any broken or detached pieces of ground, separated by creeks or ravines from the main body of your land, plant upon the same a grove of basswood or American linden (*Tilia Americana*). The tree grows to a large size, and the blossoms yield, in many seasons, profusely of honey. As an ornamental shade tree, it is surpassed by few.

Sow of buckwheat (the silver skin variety) the last of May any pieces or corners of ground you may have to the extent of one acre; it will keep down the weeds, the straw is a valuable fertilizer for the ground, and the bloom will be in its prime for bees during the last of July, when there is ordinarily a scarcity of bee-forage. Sow again the first of July of buckwheat for a grain crop.

Sweet clover (*Melilotus alba*) is one of our very best honey-plants; coming into bloom in July, it continues to blossom until frost, and yields very largely of honey of the very best quality. It is a biennial, does not bloom the first year, and at the close of the second year dies, root and branch. Bee-keepers can put rough, broken ground to no better use than to sow it to sweet clover.

There has been a diversity of opinion as to whether bees gather honey from corn, or pollen only. For many years we have annually had a piece of sugar-corn in our garden, and from personal observation are satisfied that when the weather and electric conditions are right, bees gather considerable honey from it. The sweet, rich, succulent roasting-ears are a luxury; and any one who has fed the stalks to horses or cattle, and seen the gusto with which they devour them, and noticed their beneficial effects, will certify to the great value of sweet-corn fodder. Therefore, plant an acre or more of sweet corn (better more than less).

Goldenrod, if not present in your locality, may be introduced, and encouraged to grow along the roadsides, and the careful apiarist, who thus assists the busy little workers, may rest assured that he will be amply rewarded, by abundant stores of nature's own confection.

Peoria, Ills.

For the American Bee Journal.

Do Bees Puncture Grapes?

MAHALA B. CHADDOCK.

I have heard more complaints this year than ever before, about bees eating grapes. It has been so dry that the bees have had nothing to gather since the fourth crop of white clover, until the grapes began to ripen. I have stood by the bees as well as I know how, fighting their battles for them over and over again.

The other day a woman that was picking grapes here, said: "Why, see here, Mahala, here the bees are eating your own grapes. You believe it now, don't you?" and I went over the same old arguments to her. I know that not one person in a hundred believes what I say, but I go on saying it to all and sundry, just the same.

Vermont, Ills.

[The weather, drouth, birds and wasps, etc., are always the cause of the grape-skins being opened—then the bees will make short work of sucking up the juice. We will here quote a few authorities to prove our assertion. Dr. S. S. Rathvon, the learned editor of the *Lancaster Farmer*, a paper of excellent scope and character, and devoted to the highest interests of agriculture and horticulture, remarks as follows:

I have grown grapes (Isabellas, Clintons, Concords, Hartford Prolifics, Marthas, Delawares) upon my premises for thirty years, and yet I have never observed a bee cutting or tearing open any of them.....

I have not conversed with a single person who says he ever saw a bee in the act of cutting open grapes. But the grapes are found ruptured, and the bees at work upon them, and that seems to be the bulk of the testimony.

Mr. Charles R. Muth, Secretary of the Cincinnati Entomological Society, has made observations and experiments, and his testimony is very weighty. He says:

If you lay a ripe bunch of grapes with sound berries in front of the hive, with the entrance thereto contracted to ⅛ or to ¼ of an inch, so that every bee going out or coming home will have to run over or around the bunch, you will notice that they try their very best to attack the grapes, while yet every berry remains intact.

He found the same to be true of a sound, ripe Bartlett pear. After he had satisfied himself of the inability of bees to penetrate the skin of the grape, he then punctured each berry with a pin, and in an hour or two nothing remained but the skins and the stem.

Some persons aver that the bees sting the grapes, and thus puncture the skins, thereby destroying the fruit; but the following from a lecture delivered by Prof. F. W. Tustin, before the Lewisburg, (Pa.) Scientific Society, will set the matter to rest. He says:

The sting of the bee is an organ in its structure, and in its use, quite different from the mandibles. It is situated in the posterior part of the body, and is a finely pointed instrument with an open tube extending along its entire length. At the root of the sting is a little sac in which is contained the poisonous fluid, which the bee injects through this tube into the wound which it may have made. The object here is to provide the insect with the necessary means of *self-defense* when it is exasperated or attacked, and so far as is known, it is only under these circumstances that the sting is used. *It is strictly an organ of defense, and in no way used as a means to assist in the gathering of the food.* When the sting is used, it simply punctures the surface to which it is applied, unless that surface should be powerful enough to resist the fine point of the sting. So that with reference to the question before us, the opinion is generally held, that in their ravages upon grapes, if bees ever do tear open the skin, they certainly do not and cannot do this with their sting, this organ having no power to tear or cut open, but *only to penetrate or puncture easily yielding substances.*

I have never seen the bee in the act of tearing open the skin of a sound grape, although I have seen repeated instances, of one and indeed several bees together luxuriating upon the sweet juices of a Delaware or a Concord.

And so far as I have been able to correspond with them, I find that the authorities upon this subject quite unanimously agree, that there is no evidence against the bee, that it tears

open the grape, although this assiduous little honey-worker is ready to appropriate the sweet substance of the grape, the peach and kindred fruits, when once the skin has been broken from any cause, whether on account of a defect in the growth of the fruit, or through disease, or by reason of an excess of juices in the fruit whereby the skin not being able to yield sufficiently must burst, or through the sting of a wasp or of other insect.

Prof. A. J. Cook, of the Michigan Agricultural College, of whom we are proud to say that he is one of the most conscientious and thoroughly-critical observers, makes these unqualified assertions:

I have lived for some years in the midst of vineyards, and where bees were very numerous, but I never saw bees tear open a sound grape. If bird or wasp or disease break the grapes, and the bees find no other stores, they will lap up the oozing juice. At such times I have broken grapes, and when they were being supped by bees, I would remove them and place sound grapes in their stead, when the bees would at once stop work.

Mr. N. W. McLain, in his official "Report to the United States Entomologist upon the observations and experiments in the practical work at the Apicultural Station in Illinois," remarks as follows concerning his experiments for testing the capacity of bees to injure fruit. He says:

The house used last season, 10 feet by 16 feet in size, having sides partly covered with wire cloth, and large screen doors in each end, was used again this year. Two colonies of Italian bees, two of hybrids, one of Caucasians, and two of Syrians were confined in this house.

These colonies were without food in their hives, and at intervals of three or four days were fed a little syrup for the purpose of keeping up their vigor, and to prevent dying from starvation. A wood-stove was placed in the house, and a high temperature was maintained for a number of hours each day.

The conditions incident to an unusually severe and protracted drouth were present within and without. The bees were repeatedly brought to the stages of hunger, thirst, and starvation, the test continuing for 40 days.

Through the favor of Mr. T. T. Lyon, President of the Michigan State Horticultural Society, I obtained 13 varieties of choice grapes from A. G. Gulley, of South Haven. Every inducement and opportunity was afforded the bees to appease their hunger and thirst by attacking the fruit which was placed before them. Some of the bunches of grapes were dipped in syrup and hung in the hives between the combs, some placed before the hives on plates, and grapes were suspended in clusters from the posts and rafters. The bees lapped and sucked all the syrup from the skins, leaving the berries smooth.

They daily visited the grapes in great numbers, and took advantage of every crack in the epidermis or opening at the stem, appropriating to their use every drop of juice exuding therefrom, but *they made no attempt to grasp the cuticle with their mandibles or claws*. I removed the epidermis carefully from dozens of grapes of various kinds, and placed them on plates before the hives. The bees lapped up all the juice on the outside of the film surrounding the segments of the grape, leaving this delicate film dry and shining, but through and beyond this film they were not able to penetrate.

I punctured the skins of grapes of all kinds by passing needles of various sizes through the grape, and placed these before the bees. The needles used were in size from a fine cambric needle to a packing needle. The amount of juice appropriated was in proportion to the size of the opening in the skins, and the number of segments of the grape broken.

The same was true where grapes burst from over-ripeness. Bees are not only *unable to penetrate the epidermis of the grape*, but they also appear to be unable, even when impelled by the *direst necessity*, to penetrate the *film surrounding the berry*, even after the epidermis is removed. Grapes so prepared, without exception laid before the hives until dried up. If but one segment of a grape be broken by violence or by over-ripeness, the bees are unable to reach the juice beyond the film separating the broken from the unbroken segments until further violence or decay permits an entrance for the tongue.

Clusters of sound grapes which I hung between the comb frames in the hives occupied by strong colonies, were unbroken and sound after fifteen days' exposure in the hives. The skins were polished smooth, but none were broken. I also stopped up the entrance to several hives—containing good-sized colonies—in the apiary and in the wire-covered house, by pushing sound grapes into the opening, so close together that the bees could not pass through. By this means the bees were confined to the hives for days in succession, not being able to break down and remove the grapes, and although the skins of the grapes next the inside of the hive were polished smooth, none were broken or injured.

The past season furnished an excellent opportunity to observe the capacity of bees, under so exceptional circumstances, to injure fruit, for the drouth was very exceptional both in duration and severity, and I was called to several places by fruit-growers to witness the proof that bees were "tearing open the skins of the grapes," and otherwise behaving in a manner altogether unworthy of any insect enjoying a wide reputation for virtue and orderly living.

In each instance I succeeded in convincing the fruit-grower that the bees were simply performing the office of gleaners; that violence from other sources, or over-ripeness or decay had preceded the bees, and that he would be acting the part of wisdom in following the example of the bees in gathering the grapes before further violence, or the action of the elements rendered them worthless.

After grapes have been subjected to such violence, or have so far burst open and decayed as to make it possible for bees to injure them, and the circumstances are so exceptional as to lead the bees to seek such food, unless they are speedily gathered they would soon become worthless if unmolested.

During the past season I made many visits to vineyards—one located near the apiary I visited every day, and my observations and experience with bees in confinement, and those having free access to the vineyards furnishes abundant proof to convince me that *bees do not and cannot under any circumstances injure sound fruit*. If from any cause the pulp is exposed, such as the attack of birds or wasps—the most common source of injury—or from the ovipositing of insects, or bursting of the berry from over-ripeness, and if no other resources are available, the bees appropriate and carry away the juice, and the extent of the injury depends upon the degree to which the pulp is exposed, the sweetness of the juice, and the number and necessities of the bees.

In the face of this very positive testimony not only from entomologists and scientists, but also a grape-grower of 30 years' experience (Dr. Rathvon), is it possible any longer to entertain a doubt on the subject? The bees are innocent, and before the bar of public opinion are exonerated of the charges so persistently made against them.

They fructify the flowers, and thereby increase the fruit, but they do no damage to the horticulturist nor to the fruit-growers!—ED.]

For the American Bee Journal.

Census Statistics—Hive-Covers.

D. F. PARK.

I notice on page 581 the editor's comments on the worthlessness of the United States census statistics, and I would mention that the enumerator of this district refused to take my honey report, saying that his instructions were not to take any report of farm products unless produced on three acres of land. This decision shut out about 300 colonies in this village alone, and if so construed everywhere, it would make a great difference in the grand total. Would it not be well to have some proper ruling before taking the next census?

Now as we are preparing our bees for winter, allow me to suggest my cover: Make a box the size of the hive, and 5 inches high; lay on it a piece of the matting that comes on tea-chests, then nail on strips of wood all around it one inch wide and ⅜-

inch thick. Nail two strips across, and you have a cover that costs almost nothing, and will last for years, as the bees do not cut the matting as they do burlap. The strips raise it above the frames, and does away with Hill's and all other devices. In winter fill it with chaff or planer shavings. If you wish to feed in the spring, remove the chaff and cut a hole, put in all the feed you please, and there will be no danger from robber bees. My losses in wintering do not exceed one per cent, while last winter 75 colonies came through without loss, on the summer stands.

Athens, ♁ Pa., Sept. 15, 1887.

Local Convention Directory.

1887. *Time and place of Meeting.*

Oct. 5.—Eastern Indiana, at Richmond, Ind.
M. G. Reynolds, Sec., Williamsburg, Ind.

Oct. 18.—Kentucky State, at Falmouth, Ky.
J. T. Connley, Sec., Napoleon, Ky.

Oct. 26, 27.—Pan-Handle, at Wheeling, W. Va.
W. L. Kinsey, Sec., Blaine, O.

Nov. 16-18.—North American, at Chicago, Ills.
W. Z. Hutchinson, Sec., Rogersville, Mich.

Dec. 7-9.—Michigan State, at East Saginaw, Mich.
H. D. Cutting, Sec., Clinton, Mich.

1888.
Jan. 20.—Haldimand, at Cayuga, Ontario.
E. C. Campbell, Sec., Cayuga, Ont.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—Ed.

SELECTIONS FROM OUR LETTER-BOX

Pleasing Results.—John McKeon, Dryden, ☉ N. Y., on Sept. 14, 1887, writes:

We (Mrs. M. and I) commenced the season with 41 colonies, increased them to 61 by natural swarming, and have taken 2,400 pounds of comb honey in one-pound sections, about 100 pounds more in unfinished sections, and 20 gallons of white extracted or amber color. We have 10 supers full of buckwheat honey to extract, and therefore we are well pleased with the result. We have taken the advice of Mr. Hutchinson, and "carry a stiff upper lip."

Better than the Average Yield.—W. D. Markham, Hart, ☋ Mich., on Sept. 17, 1887, writes:

I commenced the season on May 1 with 80 colonies, and had 60 first swarms, but only increased my apiary to 108 colonies. I never saw so much swarming; the want of room did not seem to make any difference. Those colonies worked for extracted were almost as bad as any. I worked two together, and the sequel shows that it was a good scheme, for honey was not very plenty, only just enough to stimulate them to swarm. But on July 1 we had a good rain; basswood was just in bloom, and what honey they got for me they gathered in about seven days, except about 400 pounds of fall honey, which is more than I have had for a number of years. My surplus is 2,500 pounds, 600 pounds in sections, and the balance is extracted honey, but it is almost all fine and white. I never had my bees in better condition for winter. I have the surplus arrangements all off, and shall feed up a few colonies that have been worked for extracted honey; but those worked for comb honey have plenty, and some of them could spare a little. I hope to realize a good price for my honey, and I notice that it is generally conceded that honey will command a high price.

Bug-Juice for Winter Stores.—W. Mason, Fillmore, ☋ Ind., on Sept. 19, 1887, says:

The drouth was broken on Aug. 15, and since then the showers have started the bloom on several plants. Bees are gathering some honey, and are getting in fair condition; but at this writing the bees have taken to the burr-oak leaves, gathering the bug-juice or honey-dew stuff at a fearful rate, and will fill their hives in a short time. The leaves are dripping with it. There is plenty of bloom to work on, but it is neglected by the bees. Will this prove to be bad for wintering? I have greater fears in less copious feeding of sugar syrup. Will it prove to be a remedy, however? A great deal is being stored in the upper story, which will be removed later. What would you do? Extract it and feed?

[Extract the bug-juice and feed sugar syrup, is the best advice we can give. Thin, sour honey is just as bad for winter stores as bug-juice. Be careful not to have the syrup too thin. —Ed.]

Thoroughwort, Asters, etc.—Eden M. Coombs, Memphis, ♀ Ind., on Sept. 19, 1887, writes:

I wish you would name the honey-plants that I send. No. 1 has been secreting nectar for about two weeks, and some colonies are beginning to seal it in the upper stories, gathered, I think, mostly from this plant. There is a great deal of it, and I have seen as many as a dozen bees on a plant at a time, and they work on it the entire day. The plant grows from 1 foot to 6 feet high; those of 1 foot have generally only one stalk each; larger plants have several stalks from the same root. Each stem has several laterals, each one throwing out small, short stems, and hundreds of blossoms.

Plant No. 2 is called by some here, the "last rose of summer." It is just now beginning to bloom, and secretes nectar for about three weeks. It grows on an average about 20 inches high. There are "oceans of it," and if it secretes nectar like it has in former years, I may be able to take some surplus honey yet this fall.

We have considerable goldenrod, but it is not as good as the two above-named plants here, although the bees seem to work on it better this year than usual. We also have heart's-ease and Spanish-needle. We have had a gentle rain of a day and a half duration, that will make the bees hum, unless it should continue to be wet and cool. Let the name "extracted honey" still be *extracted honey!*

[No. 1 is thoroughwort, also called boneset (*eupatorium*). No. 2 is one of the numerous family of asters (*tradescanti*), or Michaelmas daisy. Both are excellent honey-producers.—Ed.]

Bee-Cellars, Clover and Goldenrod.—James Shaw, Reed's Landing, ☌ Minn., on Sept. 18, 1887, writes:

I have a bee-cellar dug in a bank. The temperature was down to 37° at times last winter, and my bees wintered well; they came out strong and healthy. 1. Will you please tell me whether it would be advisable to raise the temperature by using an oil-stove with a 2-inch pipe running into the ventilator.

2. What season of the year is best to sow clover? Will it seed itself after it is started? I wish to raise it for bee-forage.

I have 10 colonies, and they will average 75 pounds each. This is my second year in bee-keeping. I have used small starters this season, and the bees have made some crooked combs. I like large starters the best.

3. I send you a branch of a plant that the bees are working strong on. I wish you would tell me its name.

[1. It is preferable to have the temperature a few degrees higher, and it can be easily raised by the judicious use of an oil-stove.

2. Sow white clover seed in the spring broadcast, 5 or 6 pounds to the acre; if for grazing, mix with timothy or blue grass, using 3 pounds to the acre. It will re-seed the ground after once sowing.

3. The bloom is that of one of the numerous goldenrods (*solidago*), and is excellent for honey of a rich, golden color.—Ed.]

Market Nomenclature.—C. F. Muth & Son, Cincinnati, ♀ O., on Sept. 20, 1887, write:

In reply to a number of inquiries, allow us to make the following explanations: The expression, "On arrival," means that honey (like other goods) brings the stipulated price at the wharf or other depot here. It is the net price, no charges being made for hauling, storage, commission, etc. It does not mean that any one will buy all the honey that arrives at the wharfs or depots at that price. Buyers take all they want at the range of those prices. "In a jobbing way" means the price which honey brings when it passes from the hands of the wholesaler into those of the retailer.

The demand is good for extracted honey from manufacturers who principally buy Southern honey. But few will buy clover or other varieties for manufacturing purposes.

Comb honey brings more now than it will bring next Christmas, if our experience of former years is a criterion to go by. Editors are wrong in advising bee-keepers to hold their crop for higher prices. If we are wrong, please let us know in due time, and we shall acknowledge our error.

[We never advised any bee-keeper to hold comb honey till Christmas, but we do think that October is early enough to put it on the market.—ED.]

Feeding Brown Sugar to Bees.—F. Lederman, Steinmetz, Mo., on Sept. 20, 1887, writes:

My bees being short of stores, I have to feed. For that purpose I bought a quantity of light brown sugar (see sample), it being a little cheaper than white granulated. I prepared it as Mr. Heddon advises in the BEE JOURNAL. Having boiled one barrel of sugar, I began to feed the bees on the top of the hives, but the bees "snuffed" a little at that stuff, and then left it alone. Thinking that the syrup might be too thick, or had too much acid, I made it thinner, but it was useless; the bees took a little more of it, and when tasted, did not touch it a second time. Please help me solve this puzzle. Had I means to buy other white sugar, it would be well, but I cannot afford it. I am an old man. In preparing the sugar, and in the management of feeding, I have made no mistake.

[As our correspondent says he used the Heddon method (all but getting the kind of sugar therein stated), we referred the matter to him for reply. —ED.]

In the spring when brood-rearing is rife, bees would take this syrup, but now (especially if a little cool) they will not touch sugar syrup with the cane flavor. I tried that on syrup bought at a grocery, that was pure cane, for I presume you are aware that a pure cane syrup can be bought at less price than even the common glucose mixture. Now if the bees still reject the syrup, Mr. Ledermann had better boil it down until it will stir to a "grain," and use it up in cooking. Why did he not *wholly* follow my directions, and buy granulated sugar? He has now found that the further way around is the nearest way across.—JAMES HEDDON.

When Renewing your subscription please try to get your neighbor who keeps bees to join with you in taking the BEE JOURNAL. It is now *so cheap* that no one can afford to do without it. We will present a **Binder** for the BEE JOURNAL to any one sending us three subscriptions—with $3.00—direct to this office. It **will pay** any one to devote a few hours, to get subscribers.

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

Issued every Wednesday by

THOMAS G. NEWMAN & SON,

PROPRIETORS.

923 & 925 WEST MADISON ST., CHICAGO ILL.

At One Dollar a Year.

ALFRED H. NEWMAN,

BUSINESS MANAGER.

Special Notices.

To Correspondents.—It would save us much trouble, if all would be particular to give their P. O. address and name, when writing to this office. We have several letters some inclosing money) that have no name; many others having no Post-Office, County or State. Also, if you live near one post-office and get your mail at another, be sure to give the address we have on our list.

As there is Another firm in Chicago by the name of "Newman & Son," we wish our correspondents would write "American Bee Journal" on the envelope when writing to this office. Several letters of ours have already gone to the other firm (a commission house), causing vexatious delay and trouble.

We will Present Webster's Dictionary (pocket edition), and send it by mail, postpaid, for two subscribers with $2. It is always useful to have a dictionary at hand to decide as to the spelling of words, and to determine their meaning.

Money Orders can now be obtained at the Post Offices at reduced rates. Five dollars and under costs now only 5 cents. As these are absolutely safe, it will pay to get them instead of the Postal Notes which are payable to any one who presents them, and are in no way safe.

Red Labels for one-pound pails of honey, size 3x4½ inches.—We have now gotten up a lot of these Labels, and can supply them at the following prices: 100 for $1.00; 250 for $1.50; 500 for $2.00; 1,000 for $3.00; all with name and address of apiarist printed on them—by mail, postpaid.

E. Duncan Sniffen, Advertising Agent, 3 Park Row, New York, inserts advertisements in all first-class Newspapers and Magazines with more promptness and at lower prices than can be obtained elsewhere. He gives special attention to writing and setting up advertisements in the most attractive manner, and guarantees entire satisfaction. In all his dealings, he is honorable and prompt. Send for his Catalogue of first-class advertising mediums. Mailed free. 52A40t

A Valuable Book Given Away.—We have made arrangements by which we can supply the AMERICAN BEE JOURNAL and the New York *World*—both weekly—for one year, for $2.10, and **present** the subscriber with **one of these books,** bound in Leatherette Free Calf:

HISTORY OF THE UNITED STATES—from 432 to 1887.—320 pages.—Price, $2 00.

HISTORY OF ENGLAND—from before the Christian era to 1887.—Price, $2.00.

EVERYBODY'S BOOK—a treasury of useful knowledge.—410 pages.—Price, $2.00.

The extra 10 cents is for postage on the book, which must be selected by the subscriber at the time of sending the subscription, and cannot be afterwards exchanged.

The book selected will be mailed in a cardboard case, at the subscriber's risk; if lost it cannot be replaced. Be sure to write your name, post-office, county and State plainly, and then the risk of loss is *very* small. The subscriptions can commence at any time.

Remember, the amount is **$2.10** for both papers, and the Book and postage.

Sweet Clover, (*Melilotus alba*), furnishes the most reliable crop of honey from July until frost, and at the same time it furnishes the most delicious honey, light in color, and thick in body. It may be sown in waste places, fence corners, or on the roadside. Sow two years running, on the same land, and the honey crop will be without intermission. Money invested in Sweet Clover Seed will prove a good investment. The Seed may be obtained at this office at the following prices: $6.00 per bushel (60 lbs.); $1.75 per peck, or 20 cents per pound.

Simmins' Non-Swarming System.—We have received another shipment of these books, and have made such favorable terms, that we will now club them with the BEE JOURNAL for one year, both postpaid, for **$1.25.** We can supply all orders by **return mail.** The subscription to the BEE JOURNAL can be for next year, this year, or may begin anew at any time.

Enameled Cloth for covering frames, price per yard, 45 inches wide, 20 cents; if a whole piece of 12 yards is taken, $2.25; 10 pieces, $20.00; if ordered by mail, send 15 cents per yard extra for postage.

Preserve your Papers for reference. If you have no **BINDER** we will mail you one for 60 cents, or you can have one FREE if you will send us 3 new yearly subscriptions for the BEE JOURNAL.

☞ **Sample Copies** of the BEE JOURNAL will be sent FREE upon application. Any one intending to get up a club can have sample copies sent to the persons they desire to interview, by sending the names to this office, or we will send them all to the agent.

Yucca Brushes are employed for removing bees from the combs. They are a soft, vegetable fiber, and do not irritate the bees. We can supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

Mr. Elvin S. Armstrong, of Jerseyville, Ills., has for several years made a large exhibit at the St. Joseph, Mo., Inter-State Exposition. This year his exhibit included colonies of Italian bees, uni-comb observation-nuclei, with beautiful queens, large and well-marked. A grand display of comb and extracted honey, the latter put up in the most approved small packages of all kinds. An exhibit of apiarian supplies which was very creditable and diversified.

His hive and section-case exhibited, was a marvel of neatness, and almost perfection itself in all its essential features.

His use of the T-tins in the surplus-section cases is very commendable; they serve as dividers as well as supports for the sections—the whole case is capable of being invertible at will.

The manipulating side of the section-case, as well as the brood-chamber of the hive, is easily operated and can be adjusted instantly.

Conventions.—The time for holding Bee-Keepers' Conventions will soon be here, and we cannot give any better advice than this: Let each one attend who can do so, and take part in making these meetings interesting and instructive. If you have not already obtained the "Bee-Keepers' Convention Hand-Book," do so at once to post yourself up on how to conduct such meetings correctly. It contains a simple Manual of Parliamentary Law and Rules of Order for the guidance of officers and members of of Local Conventions—Model Constitution and By-Laws for a Local Society—Programme for a Convention, with Subjects for Discusson—List of Premiums for Fairs, etc. Bound in cloth, and suitable for the pocket. Price, 50 cents. We will club this book and the AMERICAN BEE JOURNAL for one year for $1.30.

Will you Exhibit at the Fair? If so, we will supply you all the copies of the BEE JOURNAL that you may desire to distribute to the bee-keepers you may meet there. We also have colored posters to put up over exhibits of honey, wax, supplies, etc. Send for them early, so as to be sure to have them on hand in time. They will cost you nothing, but we should like to have you get up a club for the BEE JOURNAL, if you can possibly do so.

We have a few Sets of the BEE JOURNAL for the present year, and can fill orders until further notice, for all the numbers from the first of last January. New subscribers desiring these **back numbers**, will please to state it plainly, or they will not be sent.

Should any Subscriber receive this paper any longer than it is desired, or is willing to pay for it, please send us a postal card asking to have it stopped. Be sure to write your name and address plainly. LOOK AT YOUR WRAPPER LABEL.

Our New Book List on the second page is the place from which to select the book you want. We have a large stock of every book there named, and can fill all orders on the day they are received.

Honey and Beeswax Market.

CHICAGO.

HONEY.—We quote: White clover 1-lb. sections 18@19c.; 2-lbs., 18c.; dark 1-lbs. 15@16c., and 2-lbs. 15c. Receipts are light and prices tending higher.
Sept. 23. S. T. FISH & CO., 189 S. Water St.

CHICAGO.

HONEY.—We quote: White comb in 1-lb. sections, 18c. No call for dark comb. Offerings are small of all kinds.
BEESWAX.—23c. R. A. BURNETT.
Sept. 7. 161 South Water St.

DETROIT.

HONEY.—Best white comb brings 16@18c.
BEESWAX.—23c.
Sept. 20. M. H. HUNT, Bell Branch, Mich.

CLEVELAND.

HONEY.—Best white 1-lbs. sold to-day at 17c.; 2-lbs., 14@15c.; dark, 10@12c. White extracted, 8c.
BEESWAX.—25c.
Aug. 25. A. C. KENDEL, 115 Ontario St.

BOSTON.

HONEY.—New crop, 1-lb. sections, 18@20c.; 2-lb. sections, 17@18c. Extracted, 6@8c.
BEESWAX.—25 cts. per lb.
Sept. 16. BLAKE & RIPLEY, 57 Chatham Street.

SAN FRANCISCO.

HONEY.—We quote: Extracted, white liquid, 5½@5¾c.; amber colored and candied, 4½@5¼c.—White to extra white comb, 12@15c.; amber, 8@11c. Receipts light and prices firm.
BEESWAX.—17@21c.
Sept. 9. SCHACHT & LEMCKE, 122-124 Davis St.

SAN FRANCISCO.

HONEY.—We quote: White comb, 12@13c.; extra white comb, 14 to 15c.; dark, 7 to 10c. White extracted, 5½@5¾c.; light amber, 4½@5c.; amber and candied, 4¼@4½c. Receipts light; poor crop.
BEESWAX.—21@23c.
July 25. O. B. SMITH & CO., 423 Front St.

MILWAUKEE.

HONEY.—Choice 1-lbs., 17@18c.; 2-bs., 15@16c. White extracted in kegs and barrels, 7½@8c., and in tin cans, 8c.; dark in kegs and barrels, 6@6½c., in tin cans, 6½@7c. Demand good; supply limited.
BEESWAX.—25c.
Aug 28. A. V. BISHOP, 142 W. Water St.

NEW YORK.

HONEY.—We quote: Fancy white in 1-lb. sections, 17@19c.; the same in 2-lbs., 15@16c.; buckwheat 1-lbs., 12@14c.; 2-lbs., 10@12c. Off grades 1@2c. per lb. less. White extracted, 8@9c.; buckwheat, 5½@6c.: Southern, per gallon, 60@70 cts.—Market seems to be unsettled.
BEESWAX.—22@23c.
McCAUL & HILDRETH BROS.,
Sept. 20. 28 & 30 W. Broadway, near Duane St.

KANSAS CITY.

HONEY.—We quote new crop: Choice white 2-lb. sections, 16@17c.; dark 2-lbs., 12@14c.; choice white 1-lbs., 18@20c.; dark 1-lbs., 14@16c. White extracted, 8@10c.; dark, 5@7c. Demand good, but light supply.
BEESWAX.—21 to 22c.
Sep. 21. HAMBLIN & BEARSS, 514 Walnut St.

KANSAS CITY.

HONEY.—We quote: White 1-lbs., 16@18c.; dark, 15@16c.; white 2-lbs., 15@17c.; dark, 14@15c.; California—white 1-lbs., 15@17c., 2-lbs., 15@16c.; dark 1-lbs. 14@15c., 2-lbs. 14c. Calif. white extracted, 7@7½c.; dark, 6@6½c. No white clover in market.
BEESWAX.—No. 1, 20@22c.; No. 2, 16@18c.
Aug. 24. CLEMONS, CLOON & CO., cor 4th & Walnut

ST. LOUIS.

HONEY.—Choice comb, 13@14c.; latter price for choice white clover in good condition. Strained, in barrels, 4@4½c. Extra fancy, of bright color and in No. 1 packages, ½-cent advance on above. Extracted, in bbls., 4½@5½c.; in cans, 6½ to 7c.—Short crop indicates further advance in prices.
BEESWAX.—20½c. for prime.
Sept. 22. D. G. TUTT & CO., Commercial St.

CINCINNATI.

HONEY.—We quote extracted at 3½@7c. per lb. Demand is good for clover honey in square glass jars from the jobbing trade. No new comb honey is in this market, but we would think that choice white would bring 18@20c. in a jobbing way.
BEESWAX.—Demand good—20@22c. per lb. for good to choice yellow, on arrival.
Sep. 20. C. F. MUTH & SON, Freeman & Central Av.

NEW YORK.

HONEY.—We quote: Fancy white 1-lb. sections, paper boxes, 17@19c.; fancy 1-lbs., glassed or unglassed, 17@18c.; fancy 2-pounds., glassed, 14@16c. Lower grades 1@2c. per lb. less. Buckwheat 1-lbs., paper boxes, 11@12c.; same glassed or unglassed, 10@11c.; 2-lbs. glassed, 9@10c. Extracted, white, 7@8c.; dark, 5@6c. Demand very good.
Sep. 21. F. G. STROHMEYER & CO., 122 Water St.

PHILADELPHIA.

HONEY.—Fancy white 1-lbs., 19@20c.; fair 1-lbs. 16@18c. Demand for extracted in jars and bottles is opening early and well. This market to a great extent is governed by New York prices.
BEESWAX.—24@25c.
Sept. 20. ARTHUR TODD, 2122 N. Front St.

We are sometimes asked who our authorized agents are. Every subscriber is such an agent; we have no others, and we greatly desire that each one would at least send in the name of one new subscriber with his own renewal for 1888. The next few weeks is the time to do this. We hope every subscriber will do his or her best to double our list of subscribers.

Colored Posters for putting up over honey exhibits at Fairs are quite attractive, as well as useful. We have prepared some for the BEE JOURNAL, and will send two or more free of cost to any one who will use them, and try to get up a club.

We have a large quantity of CHOICE WHITE EXTRACTED HONEY, in kegs holding from 200 lbs. to 225 lbs. each, which we will deliver on board the cars at **10 cents** per lb. Orders solicited.

Queens.—We can mail a Tested Italian Queen (bred for the best results as well as for beauty) for $2.00; Untested Queens, $1 each, or $9.00 per dozen. Orders solicited.

We pay 20 cents per pound, delivered here, for good Yellow Beeswax. To avoid mistakes, the shipper's name should always be on each package.

Advertisements.

WORK FOR ALL. $50 A WEEK & expenses paid. Outfit worth $5 & particulars free. P. O. Vickery, Augusta, Me.
39A8t

FOR SALE in CALIFORNIA.

ON account of the death of the proprietor, Mr. J. D. ENAS, a RANCH of 240 Acres, partly Fruit—80 Colonies of Bees, Steam Machinery for the manufacture of Supplies for bee-keepers (a well-established business). The Land will be sold in 40 or 80 acre tracts. Also, Stock, the Farming Implements, and a large stock of Apiarian Supplies. For particulars, address

MRS. J. D. ENAS, (P. O. Box 306),
38A6t NAPA CITY, CALIFORNIA.

COMB HONEY WANTED.

WE should be pleased to correspond with any one having **COMB HONEY** For Sale. We sell on Commission at highest market prices. Address,

S. T. FISH & CO.,
189 South Water St., CHICAGO, ILLS.
38A13t

Dadant's Foundation Factory, wholesale and retail. See advertisement in another column.

PRICES REDUCED!

ONE Warranted Queen..... $ 75
Six " Queens..... 4.00
Two dozen " " 15.00
Select Tested Queen..... 1.50
☞ Orders filled by return mail.

Address, J. T. WILSON,
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The NEW Heddon Hive.

We have made arrangements with the inventor by which we shall make and sell the Heddon Reversible Hive, both at wholesale and retail; nailed and also in the flat.

The brood-chamber is in two sections; also the surplus arrangement, which may be interchanged or inverted at will. The cover, bottom-board, and top and bottom of each sectional case has one-half of a regular bee-space, so that the surplus cases with the sections, may be placed between the two brood-chambers, or the latter may be transposed or inverted—in fact, all parts of this hive are perfectly interchangeable. The brood-frames will ALL be bored for wires.

A SAMPLE HIVE includes the bottom-board and stand; a slatted honey-board, and cover; two 6-inch brood-chambers, each containing 8 frames; two surplus arrangements, each containing 28 one-pound sections, one with wide frames and separators, and the other without separators. This latter chamber can be interchanged with the other stories, but cannot be reversed. It is NAILED AND PAINTED, and ready for immediate use. Price, $4.00, complete.

THOMAS G. NEWMAN & SON,
923 & 925 West Madison-St., CHICAGO, ILL.

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Patent Flat-Bottom Comb Foundation

High Side Walls, 4 to 14 square feet to the pound. Wholesale and Retail. Circulars and Samples free

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Muth's Honey Extractor,

Perfection Cold-Blast Smokers,

SQUARE GLASS HONEY-JARS, etc.

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CHAS. F. MUTH & SON,
Freeman & Central Ave., - CINCINNATI, O.
P.S.—Send 10c. for Practical Hints to Bee-Keepers

Send 75 Cents for my New Book—"A Year among the Bees;" 114 pages, cloth bound. Address,

DR. C. C. MILLER,
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HOW TO RAISE COMB HONEY,

PRICE 5 cents. You need this pamphlet, and my free Bee and Supply Circular. 31Atf

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"Boss" One-Piece Sections,

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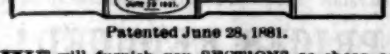

Patented June 28, 1881.

WE will furnish you SECTIONS as cheap as the cheapest. Write for price-list.

Watertown, Wis., May 1st, 1887.

☞ Thos. G. Newman & Son, of Chicago, sell the one-piece Sections manufactured by us.

Dadant's Foundation Factory, wholesale and retail. See advertisement in another column.

QUEENS FOR BUSINESS

UNTIL further notice, I will send by return mail, safe arrival guaranteed, Good QUEENS from my best strains noted for gentleness and honey-gathering qualities, viz:

1 Queen	$0.80
6 Queens	4.50
12 Queens	8.00

Address, WM. W. CARY,
29Atf Colerain, Franklin Co., Mass.

Extra Thin FOUNDATION

In 25-Pound Boxes.

WE CAN now furnish **VAN DEUSENS'** Extra-Thin Flat-Bottom Foundation put up in 25-lb. Boxes, in sheets 16½x28 inches, at **$12.50** per box. **12 ft.** to the lb.

☞ The above is a **special offer,** and is a **Bargain** to all who can use that quantity.

All orders for any other quantity than exactly 25 lbs. (or its multiple) will be filled at the regular price—**60 cents** per lb.

THOS. G. NEWMAN & SON.,
923 & 925 W. Madison St., CHICAGO, ILL.

☞ **If you wish to obtain the Highest Price for Honey this Season, write to Headquarters, 122 Water-street, New York,**

F. G. STROHMEYER & CO.,
Wholesale Honey Merchants.

33A26t

Dadant's Foundation Factory, wholesale and retail. See advertisement in another column.

Beautiful Italian Queens.

J. F. **WOOD** wishes to inform his former friends and patrons, that he is now filling orders promptly for those GOLDEN ITALIAN QUEENS that have given satisfaction to every customer for the past two seasons—at the low price of $1.00 per doz.; single Queen, 75 cts. *I use no lamp-nursery.*

☞ Do not fail to send for descriptive Circular; if you have not my 1888 Circular, send for that too.

JAMES F. WOOD,
29Dtf North Prescott, Mass.

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